

Heat Pipe Solar Receiver for Oxygen Production of Lunar Regolith, Phase I

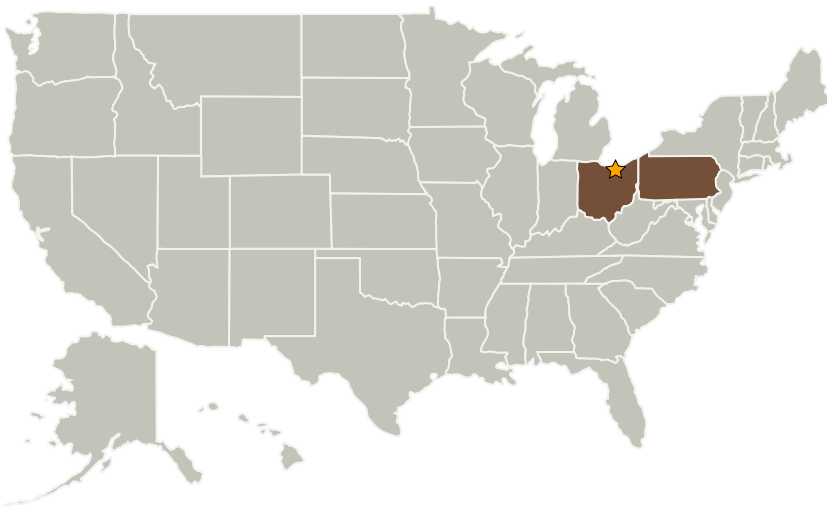
Completed Technology Project (2008 - 2008)



Project Introduction

This Small Business Innovative Research project by Advanced Cooling Technologies, Inc. (ACT) will develop an advanced high temperature heat pipe solar receiver that can be used for the production of oxygen from lunar regolith. ACT proposes a high temperature heat pipe solar receiver that can accept and transfer the solar thermal energy to the lunar soil, thereby extracting oxygen. The heat pipe design will also be able to isothermalize the reactors, increasing the available area for soil evaporation, and consequently increasing the throughput and efficiency. The overall objective of the Phase I and II programs is to develop a heat pipe solar receiver for the production of oxygen from regolith. In Phase I, the principal objectives are to design the receiver, and fabricate and test a representative heat pipe under simulated conditions. The Phase II program will fabricate and test the full scale heat pipe solar receiver.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Advanced Cooling Technologies, Inc.	Supporting Organization	Industry	Lancaster, Pennsylvania



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Ohio

Pennsylvania

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

John Hartenstine

Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
 - └ TX03.1 Power Generation and Energy Conversion
 - └ TX03.1.2 Heat Sources